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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/717,833

11/20/2003

Dean Vinson Davis

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04/21/2005

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
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EXAMINER

FERNANDEZ, KALIMAH

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/717,833	Applicant(s) DAVIS, DEAN VINSON	
	Examiner Kalimah Fernandez	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
 4a) Of the above claim(s) 14-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11-20-03</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election/Restrictions

1. Claims 14-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely reply to the restriction (election) requirement in the reply filed on 3-30-05 is acknowledged.
2. However, the reply is deemed incomplete. As required by 37 CFR 1.111, a traverse must "distinctly and specifically point out supposed error(s)" in an action. (See MPEP 818.03(a)). Here, applicant broadly alleges the restriction requirement is in error, but provides no reasons or rationale. Therefore, the reply is considered a provisional election without traverse.
3. Nevertheless, the requirement is still deem proper, because the process as claimed in group I can be practiced by other apparatuses other than the particular ionization source described in group II. The requirement insisted upon, because these separates have acquired a separate status in the art.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4-7 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,015,848 issued to Bomse et al.

6. Bomse et al disclose a method for identifying components of a sample mixture in a FT-ICR-MS (see for example col.1, lines 5-10).

7. Bomse et al disclose the steps:

- 1) Selecting a first ionic partner having ionization potential within the range of ionization potentials (see for example col.6, lines 1-9);
- 2) introducing the first ionic partner into the FT-ICR-MS chamber (see for example col.8, lines 44-68);
- 3) introducing the sample mixture into the FT-ICR-MS chamber, whereby a charge exchange reaction takes place in the

chamber between the first ionic partner and those components of the sample mixture having ionization potentials below the ionization potential of the first ionic partner, forming a first ionized mixture (see for example col.6, lines 58-68); and
4) detecting the ionized components of the first ionized mixture in the FT-ICR-MS chamber (see for example col.7, lines 20-36).

8. As per claim 4, Bomse et al disclose bombarding a neutral reagent gas with electrons within the chamber (i.e. an electron impact source) (see col.4, lines 38-43).

9. As per claims 5-6, Bomse et al disclose a pressure below 10^{-6} torr (see col.39-45). Bomse et al disclose also detection at 10^{-3} , which is below 10^{-9} .

10. As per claims 7 and 11, Bomse et al disclose selection of one or more ionic partners (or components) (see for example col.35-44). Bomse et al disclose a comparison step (see for example col.4 line 64 extending to col.5, line 9).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2-3,8-9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bomse et al.

13. Bomse et al teach the claimed invention except for the first potential being 9.5 eV (or 14 eV), proscribed ionized gas as in claims 3 and 8, or the timed process of less than two seconds. Each will be addressed in turn.

14. As per claims 2 and 8, Bomse et al does not explicitly teach the first potential being 9.5 eV. However, it would have been obvious to an ordinary artisan to modify Bomse et al such that the first potential is 9.5 eV (or 14 eV) since Bomse et al teach the desirability of variably setting the potential ionization (see col. 6, lines 10-22; col.6, line 66- col.7, line 4). An obvious advantage of the modification is ease-of-use.

15. As per claims 3 and 9, Bomse et al teaches analyzing any mixtures, but does not teach the prescribed ionized gases.

16. It would have been obvious to an ordinary artisan at the time of the invention to incorporate any of the ionized gases (e.g., pyridine), because Bomse et al teach the analysis can measure any mixture (see col.3, lines 1-9). An ordinary artisan would be motivated to make this obvious modification, because it falls within the level of ordinary skill and to select a material on the basis of operator's desires.

17. As per claim 13, Bomse et al does not explicitly teach the timed process is less than two seconds.

18. However, it would have been obvious to an ordinary artisan at the time of the invention to modify Bomse et al to complete the process in less than two seconds because Bomse et al teach analysis time reduction by eliminating certain ions (see col.8, lines 26-41). It would be motivated by the obvious desire to increase throughput and productivity.

19. Claims 1-2,4-8,10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 3,446,957 issued to Llewellyn et al and US Pat No 3,937,955 issued to Comisarow et al.

20. Llewellyn et al disclose a method for identifying components of a sample mixture in an ion cyclotron resonance mass spectrometer (see abstract).

21. Llewellyn et al disclose the components having respective ionization potentials defining a range of ionization potentials (see col.1, lines 14-16).
22. Llewellyn et al disclose selecting a first ionic partner (an electron beam) having an ionization potential within the range of ionization potentials (col.2, lines 31-33).
23. Llewellyn et al disclose introducing the first ionic partner (col.1, lines 23-27; col.3, lines 5-13).
24. Llewellyn et al disclose introducing the sample mixture into the ICR MS chamber, whereby a charge exchange reaction (---- ionization) takes place in the chamber between the first ionic partner and those components of the sample mixture having ionization potentials below the ionization potential of the first ionic partner (col.1, lines 19-23). Here, ionization potential means the energy unit required to remove an electron. Llewellyn et al disclose scanning the first ionic partner potential (the beam potential) to ionize the sample mixture; thus, Llewellyn et al disclose a charge exchange reaction between the first ionic partner and those molecules having a lower ionization potential.
25. Llewellyn et al disclose forming a first ionized mixture (col.1, lines 19-23).

26. Llewellyn et al disclose detecting the ionized components of the first ionized mixture in the ICR MS chamber (col.3, lines 14-24).

27. Llewellyn et al does not teach a Fourier transform ion cyclotron resonance mass spectrometer (FT-ICR MS).

28. However, Comisarow et al suggest the desirability of a Fourier transform (FT-ICR MS) having a FT-ICR MS chamber (21)(col.20, lines 49-67).

29. It would have been obvious to an artisan having ordinary skill at the time of the invention to combine Llewellyn et al and Comisarow et al because Comisarow et al teach increase detection speed and the ability to expand mass-to-charge spectrum (see for example col.3, lines 21-42).

30. As per claims 2 and 8, Llewellyn et al teach scanning the first ionic partner--- the electron beam over a range of potentials. Therefore, a 9.3 eV (or 14 eV) ionization potential falls within the scope of Llewellyn et al., such that an ordinary artisan could select an ionization potential on the basis of its suitability for sample being analyzed.

31. As per claim 4, Llewellyn et al teach bombarding a neutral reagent gas with electrons within the chamber (col.1, lines 14-33).

32. As per claims 5-6, Llewellyn et al teach a pressure less than 10^{-6} torr (col.3, lines 33-36).

33. As per claim 7, Llewellyn et al teach setting an electron beam potential at any desirable value (col.2, lines 47-57). Llewellyn et al, therefore, reads on selecting a second ionization potential of the beam greater than the initial potential and repeating the analysis, if so desired. Moreover, it would have been obvious to an ordinary artisan to modify Llewellyn et al because repeating an essential step in a method involves only routine skill in the art.

34. As per claim 10, Llewellyn et al disclose scanning the first ionic partner potential (if desired) to ionize the sample mixture; thus, Llewellyn et al disclose a charge exchange reaction between the second ionic partner (if desired) and those molecules having a lower ionization potential.

35. As claim 12, Llewellyn et al teach identifying a component of the mixture based on information from the results from the detection steps and using an ionization potential of the component (col.1, lines 19-23).

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat No 4,933,551 issued to Bernius et al; US Pat No 4,649,279 issued to Delmore; US Pat No 2,939,952 issued to Paul et al; US Pat No 5,744,796 issued to Kinoshita et al; US Pat No 6,369,382 issued to Ito et al; US Pat No 5,248,882 issued to Liang; US Pat No 6,822,223 issued to Davis; US Pat No 5,264,697 issued to Nakagawa et al; US Pat No 6,680,203 issued to Dasseux et al; US Pat No 4,945,234 issued to Goodman et al are considered relevant to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 571-272-2470. The examiner can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KF



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